

Amend
acid, a trifluoromethane sulfonic acid, a butane sulfonic acid, a trichlorobenzene sulfonic acid, a naphthalene sulfonic acid, a perfluorobutane sulfonic acid, and a perfluorooctane sulfonic acid.--

REMARKS

By the present amendment, the independent claim 1 is amended to incorporate the subject matter of original claim 3. Correspondingly, claim 3 is cancelled as redundant of the amended claim 1, and claim 4 is amended to depend from claim 1, rather than from the cancelled claim 3.

At page 2 of the Official Action, claims 1-6 and 11-14 were rejected under 35 USC §102(b) as allegedly being anticipated by HIRAI et al. JP 61 206170. That rejection is respectfully traversed, for the following reasons.

In support of the rejection, the Official Action reproduces an oxidation/reduction equilibrium equation that appears in the left-hand column on page 5 of HIRAI et al.

However, that equilibrium depicts neither a polymer nor a constituent monomer. Instead, it appears to depict a dimer structure, which is therefore presumably included within a polymer. However, as the equilibrium equation does not indicate the nature of the overall polymer, beyond the excerpted dimer structure, it cannot be ascertained for example whether the polymer is a homopolymer of diphenylamine, or, instead, a copolymer of diphenylamine and some other monomer.

Furthermore, HIRAI et al. to the extent relied upon in the Official Action does not appear to disclose or suggest the subject matter of original claim 3, which has now been incorporated into claim 1, pertaining to the doping of the claimed polybiphenylaniline with the recited category of acid. Indeed, although the Official Action contends that all of claims 1-6 and 11-14 are anticipated by HIRAI et al., it does not appear that any attempt was made to apply the disclosure of that reference to any of the dependent claims.

We note in this regard that no English translation of the HIRAI et al. reference was supplied with the outstanding Official Action, but rather only an English-language abstract that does not appear to address the points noted above. A consideration of a full translation of HIRAI et al. might clarify its value for reference purposes relative to the present claims. To the extent relied upon at present, however, it does not support an anticipation rejection of any of the pending claims, for the reasons noted above. If the Examiner elects to order a translation of the reference, and, after considering such translation, determines that a maintenance of the rejection is justified, applicants respectfully note that any such repeated rejection should be made non-final, as it would rely on newly-provided material.

At pages 3 and 4 of the Official Action, claims 1-6 and 11-14 are again rejected under 35 USC §103(a), as allegedly being

unpatentable over KOBAYASHI et al. 4,740,436, for the reasons of record in the previous Official Action of October 3, 2001. That rejection is also respectfully traversed, for the following reasons.

In repeating the rejection based on KOBAYASHI et al., the Official Action acknowledges that the reference does not disclose a polybiphenylaniline as claimed, but points out that diphenylamine is described as being a "typical example" of the monomers embraced by the formula I. That disclosure appears at column 2, lines 51-61 of KOBAYASHI et al.

For the sake of completeness, however, it should also be noted that the immediately ensuing passage at column 2, lines 61-64 reveals that diphenylamine is not among either the "preferred" or "especially preferred" aniline derivatives of KOBAYASHI et al.

Furthermore, as KOBAYASHI et al. contemplates both homopolymerization and copolymerization of its described derivatives, a suggestion of polydiphenylamine from the disclosure of this reference would require not only selecting an expressly less-preferred derivative, but also the assumption that this less-preferred derivative should be homopolymerized rather than copolymerized. As noted previously, this latter point is far from being merely hypothetical, in view of evidence of record establishing the prior use of diphenylamine in the formation of

copolymers (see page 2 of the remarks in the response filed January 3, 2002).

However, even assuming *arguendo* that the necessary combination of selections from the disclosure of KOBAYASHI et al. might be made in order arrive at a suggestion of polydiphenylamine, such a suggestion could at best merely support an argument of *prima facie* obviousness. In that regard, applicants' previous response pointed to the comparative data in the present specification, which demonstrates unexpected results attributable to the claimed invention, relative to the comparative examples set forth in the present specification, which comparative examples are comparable to the closest polymers actually exemplified in KOBAYASHI et al. Certain of those results are presented graphically in present Figures 2-5 of this application¹.

Despite that the specification provides evidence of unexpectedly superior properties, and despite that this evidence was pointed out in the applicants' previous response of January 3, 2002, the outstanding Official Action makes no mention of it. It is therefore not apparent that this data was taken into consideration, and hence not apparent that the repeated rejection based on KOBAYASHI et al. was made after full consideration of the relevant evidence of record.

¹ The marked improvement for examples according to the invention in Figure 2 relative to comparative examples in Figure 3 is better appreciated when the different scale used on the abscissa in those figures is taken into account.

With respect to the original claim 1, it might have been considered that this evidence of record was not commensurate in scope with the scope of the claim, given that the inventive examples tested in the specification were acid-doped. However, as the amended claim 1 now incorporates the claim 3 subject matter pertaining to acid-doping, it is believed to be apparent that the showing of unexpected results provided by the specification must be regarded as commensurate in scope with the scope of the claims, and hence must be given appropriate weight.

In light of the above discussion, therefore, it is believed that none of claims 1, 3-6 and 11-14 is either anticipated by HIRAI et al. or rendered obvious by KOBAYASHI et al. Reconsideration and withdrawal of those rejections are accordingly respectfully requested.

In view of the present amendment and the foregoing remarks, therefore, it is believed that this application is now in condition for allowance, with claims 1, 2 and 4-18, as amended. Allowance and passage to issue on that basis are accordingly respectfully requested.

HARADA et al. S.N. 09/528,711

Attached hereto is a marked-up version of the changes made to the claims. The attached page is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE."

Respectfully submitted,

YOUNG & THOMPSON

By

A handwritten signature in black ink, appearing to read "Andrew J. Patch", is written over a horizontal line.

Andrew J. Patch
Attorney for Applicants
Registration No. 32,925
745 South 23rd Street
Arlington, VA 22202
Telephone: 521-2297

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claim 1 has been amended as follows:

--1. (amended) A conductive polymer comprising a polybiphenylaniline doped with a dopant comprising at least one acid having a single proton-dissociating site.--

Claim 4 has been amended as follows:

--4. (amended) The conductive polymer as claimed in claim [3] 1, wherein said acid is selected from the group consisting of a sulfuric acid, a hydrochloric acid, a perchloric acid, a benzene sulfonic acid, a p-toluene sulfonic acid, benzenesulfonyl chloride, a dodecylbenzene sulfonic acid, a methane sulfonic acid, a trifluoromethane sulfonic acid, a butane sulfonic acid, a trichlorobenzene sulfonic acid, a naphthalene sulfonic acid, a perfluorobutane sulfonic acid, and a perfluorooctane sulfonic acid.--